

Title (en)  
COUNTER-CURRENT PROCESS FOR BIOMASS CONVERSION

Title (de)  
GEGENSTROMVERFAHREN ZUR UMWANDLUNG VON BIOMASSE

Title (fr)  
PROCÉDÉ À CONTRE-COURANT POUR UNE CONVERSION DE BIOMASSE

Publication  
**EP 2376596 A4 20111019 (EN)**

Application  
**EP 09832571 A 20091210**

Priority  
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Abstract (en)  
[origin: EP2199364A2] A countercurrent process is disclosed for converting solid biomass material. The solid biomass material travels through a reactor system in countercurrent with hot heat carrier materials, such as particulate heat carrier material and hot gases. The solid biomass material is subjected to a first conversion at a first temperature  $T_1$ , and a second conversion at a second temperature,  $T_2$ , such that  $T_2 > T_1$ . Bio-oil produced at  $T_1$  is not exposed to the higher temperature  $T_2$ . As a result, secondary reactions of the bio-oil components are minimized.

IPC 8 full level  
**C10B 49/02** (2006.01); **C10B 49/16** (2006.01); **C10B 53/02** (2006.01); **C10G 3/00** (2006.01)

CPC (source: EP US)  
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**C10L 1/026** (2013.01 - EP US); **C10G 2300/1011** (2013.01 - EP US); **Y02E 50/10** (2013.01 - EP US); **Y02E 50/30** (2013.01 - US);  
**Y02P 30/20** (2015.11 - EP US)

Citation (search report)  
• [X] WO 9113948 A1 19910919 - AMOCO CORP [US]  
• [A] US 2008210536 A1 20080904 - HERY JEAN-SEBASTIEN [FR]  
• [A] WO 2008009643 A2 20080124 - BIOECON INT HOLDING NV [NL], et al  
• [A] GB 2028366 A 19800305 - G N I ENERGETI I IM GK KRZHIZH  
• [A] DE WILD P J ET AL: "Biomass valorisation by staged degasification", JOURNAL OF ANALYTICAL AND APPLIED PYROLYSIS, ELSEVIER BV, NL, vol. 85, no. 1-2, 26 August 2008 (2008-08-26), pages 124 - 133, XP026083937, ISSN: 0165-2370, [retrieved on 20080826]  
• See references of WO 2010068809A1

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